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ABSTRACT

This paper outlines the concept of "program" and one set of elements that are considered to make up the program planning process in agricultural extension, and an example of practical program planning in Rhodesia is given. Although there is a wide variety of meanings attached to the term "program" in adult education, it has been stated by Thomas (1964) that all programs consist of two factors: (1) the relationship between participant and agent (usually oral); and (2) a variety of relationships with a variety of factors in the environment, all chosen and planned by these two parties. Four overlapping factors suggested by Verner (1964) as the basis for designing the learning experience, provide a simple model which could be elaborated to suit various situations and levels of planning: (1) determination of needs; (2) identification of educational goals; (3) arrangement of learning tasks; and (4) measurement of achievement. Each of these steps is discussed. The cited program in Rhodesia, in the rather isolated Gokwe district, is based on cotton production. The foundation of the program is close liaison between specialists, extension staff, and the Cooperative Officer, and consists of the following essentials: a program that is technically sound and economically attractive; close cooperation of Extension and Cooperative functions; locally adapted recommendations, simplified to the essentials; emphasis on staff training (technical and team work); annual programs of main events; and monthly work program prepared one month in advance from the farmer/field worker level upwards. (DB)

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AGRICULTURAL EXTENSION - PROGRAMMING THE WORK

by

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AGRICULTURAL EXTENSION - PROGRAMMING THE WORK

Extension programme planning is difficult to describe because it is a complex process consisting of a series of tasks arranged in an ordered sequence, but necessitating rearrangement and adjustment as programme objectives are accomplished and redefined.

In order to give structure to the programme planning process so that it can be described, and studied, writers build up the steps, stages or elements in programme planning into a model. It must be remembered, however, that model-building is just a convenient way to clarify and perhaps improve the process. In real-life situations there will almost certainly be differing emphases and a wide variation in the practical procedures followed.

Three of the main problems which bedevilled extension programme planning in the African Tribal areas of Rhodesia during the 1960's were:

1. levels of knowledge and skill of the agricultural demonstrators initially were low
2. field staff were oriented to Master Farmer Training - teaching to a syllabus and not operating creatively in teaching farmers to solve specific problems
3. the concept of farmer participation in all phases of the programme planning process was inherited from the U.S.A. - there was always considerable doubt about the value of involving illiterate or semi-literate farmers in programme planning with the exception of relatively specific short-term planning at the demonstrator/farmer level for learning and action

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This paper outlines the concept of programme and one set of elements which are considered to make up the programme planning process. Until the questions relating to farmer participation - at what stages and in which ways - have been decided, the value of teaching set procedures of programme planning in inservice staff training are limited. This is illustrated in one example of successful programme planning in Rhodesia where extension staff undertook most of the planning - resulting in a 'package' type programme at demonstrator/farmer level.

The Concept of Programme:

Thomas (1964) notes that there is a wide variety of meanings attached to the term programme in adult education.

He suggests that a programme consists of a number of elements

- order and continuity
- a number of events or items
- future purpose - (objectives)
- events are related to each other.

He goes on to point out that programme planning and programming are inseparable from the word programme in the literature and this implies activity.

The educational value of participation by the sponsoring organisation, agents and participants is stressed by many writers, not only in carrying it out, but also in planning the programme. It is suggested that this tends to ensure that programmes will be centred in the real needs of the participants.

The stress on activity is necessary to ensure that what in fact are programme descriptions (programme plans) do not become inflexible and lose their vitality and educational value, but are continuously adapted to participants. However, programmes vary considerably in the amount of participation by clients in the actual programme planning process.

Houle and Knowles (1960) suggest that in the various approaches to programme planning there are two common factors

1. Education is a co-operative venture
2. There are four basic educational topics:

   objectives
   content
   method, and
   evaluation

Two related developments should be noted which are increasingly affecting ideas about individual learning, communication theory and programming : cybernetics and programmed instruction. The cybernetic approach implies self-regulation of activity by means of a feedback-control system or servo-mechanism. (Smith and Smith 1966).

Programmed instruction is the careful creation of a programme in a logical ordered sequence leading to the desired behaviour. The programmer first identifies and defines the desired changes in behaviour in the participants and then works backwards from these, designing the steps in the programme by which they can be accomplished.

In summary, Thomas (1964) states that all programmes consist of two factors:

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Elements in Programme Planning

Many models have been put forward to illustrate the programme planning process. Most authors assume that the programme is people-centred and particularly that it deals with problems determined through the joint participation of agents, specialists and participants. It is also assumed that agricultural extension is essentially an educational process utilising non-directive methods.

Models usually consist of elements (or steps) following each other in a time sequence as part of a cyclic process. The exception is perhaps the 'campaign' approach which focusses on an important problem and is mounted for a pre-determined period of time.

Various authors emphasise different aspects of the programme planning planning process, and because of the diversity of situations and approaches together with the complex pervasive nature of the subject it is difficult to suggest a simple model which will meet all needs.

The four overlapping factors put forward by Verner (1964) as the basis for designing the learning experience do provide a simple model which could be elaborated to suit various situations and levels of planning:

1. Determination of needs
2. Identification of educational goals
3. Arrangement of learning tasks
4. Measurement of achievement.

(The first two factors have already been considered in a previous paper presented to this workshop, (Smith 1971), the other two factors are outlined below).

3. Arrangement of the learning tasks

Verner considers the arrangement of learning tasks under three headings:

(1) The identification of specific tasks - each step in the achievement of an educational goal must be arranged in sequential order: from known to unknown, from simple to complex, etc.

(2) Selection of the appropriate educational process - this involves a consideration of methods, the nature of the learning task, characteristics and experience of the participants, abilities of the instructional agent, inherent efficiency of the technique, availability of facilities and equipment, and the nature of the learning process.

(3) The selection of resources - human and material. The subject matter content and learning tasks influence the choice and use of resources.

4. The measurement of achievement

The statement of goals is the basis of evaluation which must be built into the programme. Evaluation is not only a check on goal achievement, but also is a feedback to learners and serves as a motivation to further learning.

Determination of needs

This element may be broken down into several sub-steps: fact

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Determination of needs

This element may be broken down into several sub-steps: fact collection, situation analysis and identification of problems. These sub-steps may be undertaken in a more or less cursory assessment of the situation or a detailed survey may be carried out over a period of time.

A simple method of determining the kinds of facts needed is to focus on problems (bottlenecks to agricultural extension and improved productivity), groups - formal and informal and leaders in the area. This will assist in selecting and involving participants in the programme.

The fieldworker may undertake this type of survey in the form of a booklet/questionnaire "Do you know your area". The Extension Officer should undertake more comprehensive fact collection, mapping and contact with specialists.

The determination of problems and the ranking of priorities may involve farmers (particularly if there is a local extension committee), but must involve the relevant specialists. This is necessary because the identification of the real problems in the situation, their causes and solutions are often beyond the abilities of the local fieldworker or district extension officer.

Identification of Educational Goals.

The identification of educational goals (or objectives) involves problem-solving to determine possible solutions. Much of the literature on programme planning suggests that the people concerned should be involved in problem-solving - solutions may come from the people themselves, and in setting the relevant educational objectives based on the solutions - people are motivated to the adoption of practices they have participated in deciding upon.

Problem-solving which may be undertaken jointly with the people and specialists, involves a series of sub-steps including:-

Problem definition.
Suggesting possible solutions.
Judging possible solutions for feasibility.
Selection of practical viable solutions.

Miller (1964) and Osborne (1961) describe the problem-solving process. Osborne also describes problem-solving techniques, including 'brain storming' and Zahn (1966) describes the implications of creativity research in adult education programmes.

Arrangement of Learning Tasks.

In extension programming the arrangement of learning tasks is usually incorporated into a plan of work which also includes staff training and other activities which are not strictly educational in nature, e.g., organisation of supplies and services, etc.

Kelsey and Hearne (1963) describe a plan of work as an outline of activities so arranged as to enable efficient execution of the entire programme. It answers the questions how, where, when, and by whom the work is to be done.

A calendar of work is a plan of work arranged chronologically. Such a calendar of work may be made out in skeleton form for a year or more in advance, placing the important events under each

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A calendar of work is a plan of work arranged chronologically. Such a calendar of work may be made out in skeleton form for a year or more in advance, placing the important events under each month. This may be accompanied by a detailed calendar of specific dates continuously in preparation three months in advance. Seasons of work and habits of work may make it desirable to prepare a calendar of work quarterly.

They state that the action planned must include:-

(a) People to be reached.
(b) Goals, dates, and places.
(c) Teaching procedures to be followed.
(d) Duties, training and recognition of volunteer leaders.
(e) Part to be played by extension personnel.
(f) Part to be played by other agencies.
(g) Plans for measuring results.

Successful execution of the plan depends upon purposeful effort and necessary support in implementing each step in the correct sequence, bearing in mind the need for flexibility to cope with changed circumstances or unforeseen difficulties.

The U.S.D.A. (1962) gives some practical suggestions for execution of the plan of work:

The first requirement for successful programme action is sound technical knowledge on the part of the agent. The

second is the use of teaching methods suited to the subject matter and to the people involved.

The value of advance planning of each programme activity cannot be over-estimated. This includes making sure that all involved know their responsibilities and how to carry them out - advance preparation of teaching aids, checking on supplies and equipment to assure their availability well in advance of the time they are needed, and special efforts to make each activity a useful learning experience for all participants.

The Measurement of Achievement - Evaluation.

In many countries there has apparently been little progress in assessing the extent to which both agricultural extension programmes and participants have achieved objectives.

Part of the problem is due to the general lack of carefully devised programme objectives, the superficial approach to programme planning and the fact that evaluation has been neglected by administrators and others due to lack of time and resources to carry it out, together with the assumption that past programmes have been satisfactory.

Evaluation is a process of measuring how well a programme has succeeded in achieving its objectives.

Some of the functions of evaluation are:-

To assess the effectiveness of instruction in relation to the specific educational objectives.

To analyse the suitability of content in relation to the specific educational objectives.

To determine whether or not the time, energy and money expended in planning and conducting programmes produce results sufficient to justify the expenditure.

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To measure the extent to which the programme is meeting the needs of the participants involved.

The evaluation task involves four questions (adapted from Unesco ED/WS/135).

1. What is to be evaluated, why and how?
2. Which indicators are to be used for measuring progress?
3. How and when to collect measurement data?
4. Who will undertake evaluation tasks?

Di Franco (1960 and 1969) makes the point that a major evaluation problem is that many practitioners engaged in adult education are reluctant to expose their programmes (particularly to outside evaluators) for fear of incurring adverse criticism.

He suggests a 'systems' or 'action-research' approach to evaluation - where the purpose of evaluation is to bring about practical improvements in the programme. This type of regular evaluation should be a fundamental element of constructive programmes.

Di Franco points out the need to distinguish between regular evaluation for programme improvement and evaluation studies. The latter are designed to assess the overall impact of a programme over a period of time and are often politically motivated.

It frequently occurs that ongoing operational programmes fall short of initial stated programme objectives and thus appear to indicate poor overall impact over a period of time. Such an assessment could lead to programme curtailment.

This was found to be the position in a series of studies undertaken in the early 1960s of agricultural extension programmes started in various Latin American countries in the 1950s. It was, therefore, decided to institute a type of programme evaluation termed 'analytical studies' to locate why a programme had not been able to achieve its original objectives and to determine how it could be improved. It was carefully explained to practitioners that the aim was to strengthen, not to undermine the programme.

The basic technique was the use of a questionnaire to locate faults and weaknesses (i.e., determine the efficiency) of individuals and systems, leading on to their subsequent rectification. The long term aim was to build up an attitude of 'auto-evaluation' in the organisation itself. This was done by stressing that evaluation is an immediately useful device for programme improvement, and, when objectives are clarified in realistic terms before evaluation is commenced, it is a defence mechanism for the programme against over-ambitious expectations from outside.

In the USA where there are programme planning committees, these have the function of co-operatively planning extension programmes including evaluation of the programme and the planning process followed. Pesson (1966) and Raudabaugh (1963) discuss the organisation and development of these committees.

In the cyclic model the evaluation step leads back to programme objectives and replanning in the light of experience.

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Planning the Work - An Example from Rhodesia.

The most successful example of practical programme planning in the African tribal areas of Rhodesia comes from the rather isolated Gokwe district and is based on cotton production.

The programme was commenced in 1963 by M.G. Reid* the Group Officer, when demonstration plots of cotton were planted - the area now produces several million pounds of seed cotton annually.

The foundation on which programme planning is based is close liaison between specialists, extension staff and the Co-operative Officer.

Before the start of each new agricultural season all extension staff meet at an annual conference to discuss the programme (policy) for the coming year.

* The author wishes to acknowledge several unpublished papers by Mr. M.G. Reid, and discussions, on which this section of the paper is based.

A 'ten-point' plan of the most important facts is put forward and discussed on each crop, livestock and economics. These 'ten-point plans' are then bound together as a booklet which is a quick reference source complete with current prices, costs, sources of supply, etc. All information is related to local conditions.

The booklet is compiled locally each year. The contents are thoroughly discussed by small workshop groups. Old copies of the booklet are destroyed.

In this way all staff become thoroughly familiar with the programme and recommendations for the coming season. They can then approach their work and problems with great confidence.

The annual conference is also used as a morale-booster, for discussion of problems and to meet senior administrative staff.

In addition to the annual conference an annual tour for staff is organised to broaden knowledge and stimulate interest, and there is also periodical technical training and revision of extension methods.

The aim and the result of this staff training is a team of enthusiastic and capable workers.

Initially Test Demonstration plots were used to introduce cotton as a cash crop to farmers. Seed, fertiliser, pesticides and other cash risks were borne by the Department; land and labour were provided by the farmer, with all returns going to the farmer.

Most farmer training is carried out in the field during the actual growing season. This requires good organisation and deliberate effort by the demonstrators to get around their areas. Meetings, field days, discussion groups, visits to and talks by outstanding farmers are extension methods which are used as often as possible, but are not allowed to clash with busy work periods.

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Staff work is organised into an annual programme and a monthly programme.

The annual programme consists of a calendar of the main activities, the dates of which are planned a year in advance.

The monthly programme is made up by each demonstrator on a monthly work sheet a month in advance, and is based on a daily diary. The monthly programme is built from the farmers and field workers upwards - senior staff (Supervisors and Agricultural Officers) then plan their monthly programmes from the commitments in their demonstrators' monthly programmes.

This approach involving a sizable staff of field workers working with peasant farmers over a large area consists of the following essentials:-

1. A programme which is technically sound and economically attractive.

2. Close co-ordination of Extension and Co-operative functions.

3. Locally adapted recommendations - simplified to the essentials.

4. Emphasis on staff training - technical and team work.
5. Annual programme of main events.
6. Monthly work programme prepared one month in advance and planned from the farmer/field worker level upwards.

CONCLUSION.

Thomas (1964) provides a fitting conclusion to this paper by stating that it is in programme planning where craftsmanship distinguishes the able or great adult educator from the mere functionary, and:-

> "great programs are a source of joy in heaven, where perhaps alone they find some permanence".

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